
Arizona's School Accountability System 2011 *Technical Manual*



State of Arizona
Department of Education

Volume I: AZ LEARNS Legacy Achievement Profiles

Research & Policy
Arizona Department of Education
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Published by the Arizona Department of Education, January 2012.

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1. Introduction

In November 2001, Arizona voters approved Proposition 301 which provided funds to the Arizona Department of Education (ADE) to develop "a system to measure school performance based on student achievement, including student performance on the AIMS test." The legislative requirements for the accountability system are stated in section 15-241 (ARS § 15-241) of the Arizona Revised Statutes. The accountability system created to satisfy the statute is referred to as AZ LEARNS. The school evaluation given by the ADE to each school is referred to as the school's achievement profile. This manual describes the method and processes used to generate the 2011 AZ LEARNS achievement profiles. It provides formulas, parameters, and business rules that make up the profile calculation. Its intent is to document and explain the methods used and justify the policies adopted.

What's New for the 2011 AZ LEARNS Achievement Profiles

Individual student growth (the Measure of Academic Progress) on writing was not included because the new AIMS writing test was administered in the spring of 2011. The 2011 Status Points for writing were changed. Please see table 4.1 for further details.

Math was added to the Measure of Academic Progress in 2011.



2. Overview of the AZ LEARNS Evaluation System

This section provides an overview of how AZ LEARNS achievement profiles are determined. More detailed discussions of the methodology used to determine the profiles, including descriptions of equations, algorithms, and data used are given in subsequent chapters.

Arizona law (ARS § 15-241) mandates that the Arizona Department of Education shall compile an annual achievement profile for each public school. It specifies that the profiles of schools serving grades K-8 shall be based on:

- Percent of students who pass AIMS.
- Arizona Measure of Academic Progress (MAP).
- Performance on the English language proficiency test.

The law specifies that the profiles of high schools shall be based on:

- Percent of students who pass AIMS.
- Dropout rate.
- Graduation rate.
- Performance on the English language proficiency test.

Starting in 2008, a school that serves both grades K-8 and high school receives a unified achievement profiles based on all of the above performance measures.

The law also calls for the ADE to use a research-based methodology that shall:

- Include performance of pupils at all achievement levels.
- Account for pupil mobility.
- Account for the distribution of pupil achievement.
- Include longitudinal indicators of academic performance.

A research-based methodology is defined as the "systematic and objective application of statistical and quantitative research principles to determine a standard measurement of acceptable academic progress for each school."

The law also calls for a system of parallel achievement profiles for accommodation schools/alternative schools as defined by the Board of Education.

General Process to Calculate an Achievement Profile

The achievement profile for a school serving grades 3 through 8 consists of the following performance measures:

1. A status measure based on the performance of students on all three sections of the AIMS (reading, writing, and mathematics) in the current year.
2. A measure of improvement in aggregate student performance on the AIMS compared to the baseline year.
3. A measure of growth in individual student performance. This is the Measure of Academic Progress (MAP)



4. A measure of student performance on the state's English language proficiency assessment, AZELLA.
5. In order to create the incentive for schools to improve the achievement of average and above-average students, a school cannot earn the highly performing or excelling labels unless the percentage of its students exceeding the standard on AIMS meets specific thresholds.

The achievement profile for a high school is made up of all of the above components except for measure 3 (MAP). In addition, the following performance measures are used for high schools:

6. Dropout rate.
7. Graduation rate.

Schools are awarded scale score points based on their performance on measures one through four, six, and seven. Scale score points are then summed up for each school and compared to a scale that relates scale score points to the five profile labels: excelling, highly performing, performing plus, performing, and underperforming. Performance measure five is then examined to determine if the school has earned the highest labels of highly performing or excelling.

Note: Prior to 2009, one additional point was available to schools for meeting AYP. To compensate for the possible loss of this point, the student-level growth formula was modified to give greater weight to the available MAP points.



3. Timeline

Districts and charter holders (Local Education Agencies - LEAs) are solely responsible for submitting the data necessary for calculating achievement profiles for their schools and for ensuring its accuracy. From April 27, 2011 through August 24, 2011, schools and LEAs were given an opportunity to review and correct their testing data through on-line applications. The primary purpose of the process was to allow LEAs to correct the information for individual students. From April 27, 2011 through August 24, 2011, schools and LEAs were given the opportunity to review and correct the data used for calculating the five-year graduation rate and dropout rates used in the AZ LEARNS profile.

All program membership and demographic information relevant to AZ LEARNS profiles were taken by matching test records to the state's SAIS database of student records. Consequently, the only information that schools needed to correct in the ADE AIMS testing file were students' SAIS ID numbers (needed for matching). If program membership or other information was incorrect, schools and LEAs were required to correct it in the SAIS database.

IMPORTANT NOTE: The criteria used to select AIMS scores for AZ LEARNS profiles differ from the criteria used to select scores for AYP under NCLB. Indeed, the criteria differ among the separate components of the AZ LEARNS evaluation. The criteria also differ from the scores provided to schools by the testing contractor, and the scores publicly reported by ADE, which are available here: <http://www.azed.gov/research-evaluation/aims-assessment-results/>.

Timeline

April 27, 2011	Start of statistical review and correction of graduation and dropout rate data.
April 27, 2011	Submission of correct SAIS IDs for AIMS reading, and mathematics.
May 30, 2011	Close of application process for alternative schools.
August 24, 2011	Close of statistical review and correction of graduation and dropout rate data.
August 19, 2011	Preliminary release of AZ LEARNS achievement profiles for all schools.
August 19, 2011	Opening of window for appeals submissions.
August 24, 2011	Close of window for appeals submissions.
October 12, 2011	Public release of AZ LEARNS achievement profiles for all schools.



4. Calculation of AIMS Status and Growth Points

In the AZ LEARNS profile, schools are awarded scale score points based on student performance on the AIMS. Points are determined by performance in the current year, and improvement in student performance from the baseline year.

Awarding Status Points

The following method is used to calculate status points for every subject and grade offered by a school in which the AIMS test is administered. First, calculate the percent passing in the current year. The percentage is compared to the scale given in table 4.1, which in turn gives the status points achieved for the subject and grade.

$$\text{Percent Passing in the current year} = \frac{\text{\# Students Passing AIMS in the current year}}{\text{\# Students tested in the current year}}$$

The points are rounded to the nearest hundredth, e.g.: .675=.68; .672=.67.

Data Used

A student's score is excluded from the calculation if any of the following criteria are met:

1. The student was not matched to SAIS with a valid SAIS ID.
2. The student received no score on the test.
3. The student received an alternate accommodation on the test.
4. The student was not English proficient. A student was considered not proficient if it was indicated that she was a participant in the English language learner program for three years or less.
5. The student was not enrolled in the school for the full academic year (FAY). A student was considered FAY if she enrolled in a school during the first ten school days of the school year and remained continuously enrolled up through the testing date.

The calculation for high schools includes all students in grades 10 through 12 who have taken the AIMS either in the fall or the spring. If a high school student took the test twice in a school year in the same school, the higher of the student's two scores is used.



Table 4.1 Status Points Awarded							
Grade	Subject	Status Points 1	Status Points 2	Status Points 3	Status Points 4	Status Points 5	Status Points 6
3	Math	<40%	40%	52%	66%	79%	87%
3	Reading	< 46%	46% to 59%	60% to 73%	74% to 84%	85% to 92%	≥ 93%
4	Math	<37%	37%	50%	65%	78%	87%
4	Reading	< 40%	40% to 53%	54% to 69%	70% to 81%	82% to 90%	≥ 91%
5	Math	<31%	31%	44%	60%	73%	84%
5	Reading	< 42%	42% to 56%	57% to 72%	73% to 84%	85% to 92%	≥ 93%
5	Writing	< 32%	33%	45%	59%	71%	> 80%
6	Math	<30%	30%	43%	59%	73%	84%
6	Reading	< 38%	38% to 52%	53% to 69%	70% to 82%	83% to 91%	≥ 92%
6	Writing	< 32%	33%	45%	60%	73%	>82%
7	Math	<29%	29%	42%	58%	72%	83%
7	Reading	< 41%	41% to 54%	55% to 69%	70% to 82%	83% to 90%	≥ 91%
7	Writing	<26%	27%	39%	53%	67%	>77%
8	Math	<28%	28%	41%	56%	70%	81%
8	Reading	< 35%	35% to 48%	49% to 65%	66% to 79%	80% to 88%	≥ 89%
HS	Math	<11%	11%	22%	40%	61%	77%
HS	Reading	< 16%	16 % to 28%	29% to 46%	47% to 65%	66% to 79%	≥ 80%
HS	Writing	< 34%	35%	49%	65%	79%	> 87%

A school is awarded status points for each grade and subject if offers in which the AIMS test is administered.

Example: In the current year, 66 percent of the students in Gila Monster Elementary passed the math portion of the third grade AIMS. This value places the subject/grade in status grouping three. Gila Monster Elementary has earned three status points for this particular subject and grade.

Awarding Improvement Points

Determining a school's improvement points for each subject/grade combination is based on the average of the annual changes in the difference between the percentage of students passing and the percentage of students scoring falls far below (FFB) on the AIMS. The improvement points earned are determined by the average of the annual changes from 2006 or when a school opened, whichever is latest. Improvement points are awarded for all grades, three through eight and high school. No minimum group size is applied.

Computation of the Average Annual Change in Difference of Achievement

Improvement points for a subject/grade are calculated in the following five steps:



1. For every year for which the school was open, or until 2006, whichever is latest, for each subject/grade combination, the percentage of students passing and percentage of students scoring FFB is computed.
2. The difference in these percentages is then taken.
3. The annual change between the differences is found.
4. The average of the annual changes is compared to the improvement points (table 4.4) to determine the AZ LEARNS points for the subject/grade combination.

All values are rounded to the nearest hundredth, e.g.: .675=.68; .672=.67.

Data Used

The rules for using student scores for the growth measure are the same as for the status measure. For high school students who took the test multiple times, each student's highest score in each year is used.

Example: the following example demonstrates how growth points are calculated for a single grade and subject. Table 4.2 shows the percentage of students passing and scoring FFB, and the difference in the two percentages from 2008 to 2011 of AIMS scores for a single subject and grade for a hypothetical school.

Table 4.2 Percentage of Students			
Year	Percent Passing	Percent Falls Far Below	Difference
2008	52	18	34
2009	54	17	37
2010	57	15	42
2011	60	10	50

Table 4.3 shows the year-to-year changes in the differences from table 4.2

Table 4.3 Year-to-Year Change in Percentages		
Years	Difference	Year-to year change
2007 to 2008	37 - 34	3
2008 to 2009	42 - 37	5
2009 to 2010	50 - 42	8

The growth measure is the average $(3+5+8)/3=5.3$.



The improvement point thresholds are given in table 4.4. This table is used to convert the average annual improvement measure to AZ LEARNS improvement points.

Table 4.4 Improvement Points							
Grade	Subject	AZ LEARNS Points 1	AZ LEARNS Points 2	AZ LEARNS Points 3	AZ LEARNS Points 4	AZ LEARNS Points 5	AZ LEARNS Points 6
3 - 8	Math	<-14	-14	-10	-5	0	4
3 - 8	Read	< -14	-14 to -8	-7 to 0	1 to 7	8 to 14	≥ 15
5-7	Writ	< -16	-16 to -8	-7 to 0	1 to 11	12 to 20	≥ 21
HS	Math	<-13	-13	-9	-4	0	4
HS	Read	< -12	-12 to -5	-4 to 4	5 to 13	14 to 21	≥ 22
HS	Writ	< -10	-10 to -2	-1 to 7	8 to 16	17 to 25	≥ 26

Calculation of Subject/Grade Scale Points from AIMS

The total scale score points derived from AIMS performance for each subject/grade combination are calculated by adding the status points awarded to the AZ LEARNS improvement points awarded. A 70 percent weight is given to the school's strongest point value (status or improvement) and a 30 percent weight is given to the other point value.

If a subject/grade group earned six points, 100 percent of the weight is given to the status points. As long as data is available for the past two years, for a subject/grade combination, improvement points are both computed and combined with the status points.

The points derived from AIMS for all subject/grade combinations for a school are averaged across grades by subject and added to the scale score values for other performance measures.

Special Cases

Missing Data. If a school is missing current year AIMS test data for a subject/grade combination it offers, it receives zero growth/status scale points for that subject/grade for the achievement profile calculation for the year.

Small Grades. Subject/grade combinations with less than ten students meeting the selection criteria in the current year were not evaluated and received zero growth/status scale points.

Second Look for Small Schools. Because of the high-stakes consequences of being labeled an underperforming school and because of the uncertainty of measurement involved with small sample sizes, a school with a small number of students is given a "second look" if it faces the possibility of receiving an underperforming profile. If the preliminary profile of a school is underperforming, then the AIMS scale score points for that school are recalculated



for each subject and grade combination that has less than 16 students. For each subject/grade combination with less than 16 students, to calculate which baseline group the school belongs to, the upper bound of the 95-percent confidence interval is used. If the recalculated points move the school into a classification higher than underperforming, the school receives a performing profile, regardless of the points earned.

Let p = the percent of students in a group passing the AIMS and n = the number of students in the group. Then the equation for the upper bound of the 95-percent confidence interval (UB95) is:

$$UB95 = p + 1.96\sqrt{p(1-p)/n}.$$

As can be seen from the equation, the confidence interval depends upon the percent of students who passed the test and the number of students tested. Thus, the confidence interval will differ among grades, subjects, and schools.

The equation is an approximation of the confidence interval for a binomially distributed variable. It uses the standard normal distribution and is sufficiently accurate if the group size and percentage of students passing are large enough. For small values of n and p , a more accurate estimate of the confidence interval is made using statistical tables that provide confidence intervals for a binomially distributed variable¹. The tables are applied using the rules given in table 4.5.

Table 4.5 Rules for Determining UB95 for Small n and p	
If $n \geq 0$ and $n < 8$, and $p \geq 0.00$ and $p < 0.04$, then UB95=0.42; $p \geq 0.04$ and $p < 0.10$, then UB95=0.50; $p \geq 0.10$ and $p < 0.20$, then UB95=0.60.	If $n \geq 16$ and $n < 20$, and $p \geq 0.00$ and $p < 0.04$, then UB95=0.24; $p \geq 0.04$ and $p < 0.10$, then UB95=0.32; $p \geq 0.10$ and $p < 0.20$, then UB95=0.44.
If $n \geq 8$ and $n < 10$, and $p \geq 0.00$ and $p < 0.04$, then UB95=0.37; $p \geq 0.04$ and $p < 0.10$, then UB95=0.45; $p \geq 0.10$ and $p < 0.20$, then UB95=0.55.	If $n \geq 20$ and $n < 24$, and $p \geq 0.00$ and $p < 0.04$, then UB95=0.21; $p \geq 0.04$ and $p < 0.10$, then UB95=0.29; $p \geq 0.10$ and $p < 0.20$, then UB95=0.42.
If $n \geq 10$ and $n < 12$, and $p \geq 0.00$ and $p < 0.04$, then UB95=0.33; $p \geq 0.04$ and $p < 0.10$, then UB95=0.41; $p \geq 0.10$ and $p < 0.20$, then UB95=0.52.	If $n \geq 24$ and $n < 30$, and $p \geq 0.00$ and $p < 0.04$, then UB95=0.18; $p \geq 0.04$ and $p < 0.10$, then UB95=0.27; $p \geq 0.10$ and $p < 0.20$, then UB95=0.38.
If $n \geq 12$ and $n < 16$, and $p \geq 0.00$ and $p < 0.04$, then UB95=0.27; $p \geq 0.04$ and $p < 0.10$, then UB95=0.35; $p \geq 0.10$ and $p < 0.20$, then UB95=0.47.	If $n \geq 30$ and $n < 40$, and $p \geq 0.00$ and $p < 0.04$, then UB95=0.15; $p \geq 0.04$ and $p < 0.10$, then UB95=0.23; $p \geq 0.10$ and $p < 0.20$, then UB95=0.36.

¹ Mansfield, Edwin. 1991. *Statistics for Business and Economics, 4th Edition*. New York: W. W. Norton and Company. 280-284.



5. The Measure of Academic Progress

The measure of academic progress (MAP) is a measure of individual student academic growth based on performance on the AIMS reading and math tests. (Writing is not included in the MAP analysis.) It uses a conventional value-added approach to measuring student progress.

Calculating the number of points earned from MAP has three steps:

1. Individual expectations of one year's growth (OYG) are calculated for each student.
2. The expectation of OYG is subtracted from the actual growth achieved by the student to determine a growth index.
3. The average growth index for a school is calculated by averaging growth indices for individual students across all grades and subjects. Schools are awarded AZ LEARNS points based on this average.

Actual growth, expected growth, and the growth index are expressed in AIMS scale score points.

The Growth Index

In order to control for a ceiling effect and for student mobility, the MAP analysis is done using a standard value-added model. The value-added model is used to calculate an estimate of the expected growth for each student for each subject. The expected growth is subtracted from actual growth to determine a student's growth index.

The results of the MAP analysis for students and schools are reported in terms of the growth index. Growth indices for individual students can be averaged across schools, grades, and subjects to measure performance.

Calculating Expected Growth

The expected growth for an individual student is calculated using the following formula:

$$\text{Expected Growth} = A + B \times (209 \text{ scale score}) + C \times (\text{FAY});$$

where FAY = 1 if the student has been enrolled of the full 2011 academic year, and FAY = 0 if not. A student is considered to have been enrolled for the full 2011 academic year if she was enrolled within the first two weeks of the school year and remained continuously enrolled up to the first day of the testing window.



The parameters A, B, and C are given in tables 5.1 and 5.2 below:

Table 5.1 Parameters for Calculating Expected Growth for Math			
Student's Grade Current Year	A	B	C
4	120.9638	-0.2269	3.7108
5	153.1619	-0.2879	4.106
6	105.8317	-0.2016	4.343
7	88.3119	-0.1492	5.1193
8	89.8856	-0.1688	7.0786

Table 5.2 Parameters for Calculating Expected Growth for Reading			
Student's Grade Current Year	A	B	C
4	82.1792	-0.1864	6.6005
5	59.1302	-0.1202	4.6881
6	61.8342	-0.12	6.139
7	70.8678	-0.1421	5.6349
8	100.1088	-0.2193	5.1823

Awarding AZ LEARNS Points

The Growth Index for a school is calculated by averaging the student-level growth indices across all grades for math and reading. The number of AZ LEARNS points earned by a school is calculated using the following formula:

$$\text{AZ LEARNS points} = 5.9 + .22 * (\text{School's growth index.})$$

The scale is bounded at the bottom by 2. So, if the result of the above formula is less than 2, a school would earn 2 points. No maximum limit is placed on the number of points a school may earn. This is to reward schools that make outstanding growth with students. The point formula and the profile scale thresholds were re-developed in 2009 to compensate for the potential loss of the AYP point that was removed from the AZ LEARNS formula.

Schools without MAP

MAP is only evaluated for grades four through eight using student scores from grades three through eight. Schools do not receive points from MAP if they do not have a grade evaluated for MAP or if they have less than 16 scores in the MAP analysis.



6. Graduation and Dropout Rates

High schools are able to earn a maximum of two points total for graduation and dropout rates in the AZ LEARNS achievement profiles.

Graduation Rate

The graduation rate is a five-year, longitudinal measure of how many students graduate from high school. The formula to calculate the one-year graduation rate (used to compute average annual growth and for determining the growth needed to earn points) is:

$$\text{One-year Graduation Rate} = \frac{\text{Number in cohort who graduated within five years}}{\text{Original cohort} + \text{Transfers in} - \text{Transfers out}}$$

The three-year average is calculated by taking the total number of combined five-year graduates for the three most recent graduating classes and dividing by the total number of students in the combined classes.

$$\text{Three-year Graduation Rate} = \frac{2008 + 2009 + 2010 \text{ five-year graduates}}{\text{Combined number of students in three adjusted cohorts}}$$

The graduation rate is rounded to two digits, e.g.: .705=.71; .704=.70.

A school can earn one AZ LEARNS scale point for its graduation rate in one of three ways:

1. If its three-year average graduation rate is 90 percent or greater.
2. If its three-year average graduation rate is less than 90 percent, its current year graduation rate is greater than or equal to 74 percent, and the average annual growth of its graduation rate is 1 percentage point.
3. If its three-year average graduation rate is less than 90 percent, its current year rate is less than 74 percent, and the average annual growth of its graduation rate is 2 percentage points.

The baseline year for graduation rate is 2006 or the school's first year serving grade 12, whichever is latest. A school's annual average growth is calculated by subtracting the baseline year's rate from the current year's rate and dividing by the number of years spanned by the calculation.

$$\text{Average Annual Growth} = \frac{\text{Current one-year rate} - \text{Baseline one-year rate}}{\text{number of years in span}}$$



A school will not be evaluated on graduation rate until it serves grade 12 for two years. Additionally, there is a minimum cohort size of 15. Schools that are not evaluated for graduation rate will receive double the number of points earned via the dropout rate.

Dropout Rate

The dropout rate is an annual measure of how many students drop out of a school during a twelve-month period. The formula to calculate the one-year dropout rate (used to compute average annual decrease and for determining the decrease needed to earn points) is:

$$\text{One-year Dropout Rate} = \frac{\text{\# of student who dropped out}}{\text{\# of students enrolled during the school year}}$$

The three-year average is calculated by taking the total number of dropouts for the most recent three years and dividing by the total number of students enrolled.

$$\text{Three-year Dropout Rate} = \frac{\text{total \# of dropouts for 2008, 2009, and 2010}}{\text{total \# of students enrolled in 2008, 2009, and 2010}}$$

Like the graduation rate, a school can earn one AZ LEARNS scale point for its dropout rate in one of three ways:

1. If the three-year average dropout rate is 6 percent or less, the target is automatically met.
2. If its three-year average dropout rate is greater than 6 percent, its current year rate is greater than 9 percent, and the average annual decrease of its dropout rate is 2 percentage points.
3. If its three-year average dropout rate is greater than 6 percent, its current year is less than or equal to 9 percent, and the average annual decrease of its dropout rate is 1 percentage point.

The baseline year for dropout rate is 2006 or the school's first year of operation, whichever is latest. A school's annual average decrease is calculated by subtracting the baseline year's rate from the current year's rate and dividing by the number of years spanned by the calculation.

$$\text{Average Annual Decrease} = \frac{\text{Baseline one-year rate} - \text{Current one-year rate}}{\text{Number of years in span}}$$

A school will not be evaluated on dropout rate if it has less than 15 students in the group. Schools that are not evaluated on dropout rate will receive double the number of points earned via the graduation rate.



7. Evaluating Performance on the English Language Assessment

State law governing AZ LEARNS requires that the "results of English language learners tests" be included as part of the AZ LEARNS school evaluation. {ARS § 15-241 (D) (3) and ARS § 15-241 (E) (4)} In order to comply with this requirement, the following is part of the AZ LEARNS achievement profile calculations:

A school receives one scale point if the percentage of English language learner (ELL) students reclassified during the year across all grades served is greater than or equal to 30 percent. The formula used to determine the percentage of reclassified ELL students is:

$$\text{Percent Reclassified} = \frac{\text{Number of students reclassified}}{\text{Number of students tested with AZELLA}}$$

The percent reclassified is rounded to two digits, e.g.: .206=.21; .204=.20

Data Used

Students are included in this calculation if they meet the following criteria:

- Identified as continuing English language learners;
- Were continuously enrolled in the ELL program within the school for at least 150 calendar days;
- Were not withdrawn from the program either due to Special Education criteria or by parent request;
- Passed ELL integrity within SAIS.

Special Rules

Only groups of 16 or more students are evaluated.



8. Evaluating the Total Scale Score Value to Determine a School Achievement Profile

The tables below show the total number of scale points that schools must earn in order to receive a given achievement profile. A school may receive up to 18 scale points from status and growth; unlimited scale points from MAP if it is an elementary or middle school; a single point if it was able to reclassify 30 percent of its ELL students; and up to two graduation/dropout rate points if it is a high school.

For each school, the applicable scale score cut points for achievement profiles are calculated by averaging the AIMS scale points received for each subject; adding the ELL point received; adding points from MAP if applicable; and adding points from the graduation/dropout rate if applicable. The classification cut points for elementary schools are given in the first two columns of table 8.1 and those for high schools are given in the first column of table 8.2. In order for schools to be classified as highly performing or excelling, there is an additional z-score criterion that must be met, which is explained in the next chapter.

Table 8.1 Elementary School Classification Cut Points			
Profile	Performance Thresholds		
	Scale with MAP	Non-MAP Scale	z-score
Underperforming	<13	<7.7	
Performing	13 to 15.9	7.7 to 12.0	NA
Performing Plus	16 or more	12.1 or more	NA
Highly Performing	16 or more	12.1 or more	0.45 to 0.99
Excelling	19 or more	14.1 or more	1.00 or more

Table 8.2 High School Classification Cut Points		
Profile	Performance Thresholds	
	Scale Points	z-score
Underperforming	<9.4	
Performing	9.4 to 14.6	NA
Performing Plus	14.7 or more	NA
Highly Performing	14.7 or more	0.45 to 0.99
Excelling	16.5 or more	1.00 or more



Table 8.3 Combination School Classification Cut points			
Profile	Performance Thresholds		
	Scale with MAP	Non-MAP Scale	z-score
Underperforming	<14	<9	
Performing	14 to 16.9	9 to 13.9	NA
Performing Plus	17 or more	14 or more	NA
Highly Performing	17 or more	14 or more	0.45 to 0.99
Excelling	20 or more	16 or more	1.00 or more

Special Rules

Schools with no subject/grade combinations with at least ten students meeting the selection criteria for the status measure in the current year were automatically assigned a performing profile.

A combination (K-12) school that has insufficient students to be evaluated on MAP will be evaluated using the scale for high schools.

A combination (K-12) school that has insufficient students to be evaluated on graduation/dropout rates will be evaluated using the scale for elementary/middle schools.



9. Application of Threshold Criteria for Excelling and Highly Performing Schools

To ensure continued focus on improving the academic achievement of all students, including those students currently demonstrating proficiency, threshold criteria are applied to determine excelling and highly performing schools. To be deemed highly performing or excelling, a school must meet certain levels in the percentage of its students exceeding the standard on the AIMS. Schools must not only receive a total scale score value that places them into either excelling or highly performing, but must also meet the requisite percentage of students in the exceeds the standard category on AIMS to be designate as either excelling or highly performing. The application of threshold criteria for excelling and highly performing schools results in the following scenarios:

1. A school that receives a total scale value that places it in the excelling classification and meets the requisite percentage of students in the exceeds category on AIMS necessary for an excelling classification will be designated an excelling school.
2. A school that receives a total scale value that places it in the excelling classification and did not meet the requisite percentage of students in the exceeds performance category on AIMS necessary for an excelling profile, but did meet the requisite percentage of students in the exceeds category on AIMS necessary for a highly performing classification will be designated as a highly performing school.
3. A school that receives a total scale value that places it in the excelling classification and does not meet either the requisite percentage of students exceeding the standard on AIMS necessary for the excelling or the highly performing classification will be designated as a performing school. Such schools are recognized with the non-statutory profile of performing plus.
4. A school that receives a total scale value that places it in the highly performing classification and meets the requisite percentage of students in the exceeds category on AIMS necessary for an excelling classification will be designated as a highly performing school.
5. A school that receives a total scale value that places it in the highly performing classification and meets the requisite percentage of students in the exceeds category on AIMS necessary for a highly performing classification will be designated as a highly performing school.
6. A school that receives a total scale value that places it in the highly performing classification and does not meet either the requisite percentage of students in the exceeds category on AIMS necessary for an excelling or highly performing classification will be designated as a performing school. Such schools are recognized with the non-statutory profile of performing plus.
7. A school that receives a total scale value that places it in the performing classification will be designated as a performing school, regardless if the school



meets the requisite percentage of students in the exceeds category on AIMS necessary for an excelling or highly performing classification.

8. A school that receives a total scale value that places it in the underperforming classification will be designated as an underperforming school, regardless if the school meets the requisite percentage of students in the exceeds category on AIMS necessary for an excelling or highly performing classification.

The determination of whether a school met the goals for percent exceeding is based on a z-score calculated in the following manner:

1. For each school, the percent exceeding is calculated by grade across all three subjects for 2011 and for 2009 through 2011. The one-year estimation of percent exceeding gives credit to schools that have shown improvement in the percent of students exceeding the standard.
2. The percent exceeding is converted into a z-score for each grade by subtracting the statewide average for that grade for percent exceeding and divided by the statewide standard deviation for that grade. These parameters are given in table 9.1.

Note: The same statewide parameters are used to calculate both the one-year and three-year z-score. This is because the purpose of the z-score is to create standard scores comparable across grades, not to create scores comparing a school's performance to the state norm. The z-scores are fixed parameters so, if a school shows improvement over time, its z-score will increase regardless of the movement of the state average over the same period.

3. The one-year and three-year z-scores are averaged across all grades for a school. Each school will have two z-scores: one based on its three-year average for percent exceeding, the other based on the percent exceeding for the current year.
4. The higher of the one- and three-year averages are taken and compared to the performance thresholds. To be a highly performing school, the school must first meet the appropriate number of scale points, as explained in chapter 8, plus the average z-score for the school must be greater than or equal to 0.45. To be an excelling school, the school must first meet the appropriate number of scale points plus the average z-score must be greater than or equal to 1.00.



Table 9.1 Parameters for Calculating Z-Scores		
Grade	Average	Standard Deviation
3	0.17	0.12
4	0.16	0.11
5	0.11	0.1
6	0.14	0.12
7	0.12	0.12
8	0.12	0.11
10	0.07	0.12

Example: The following table shows the third grade AIMS scores for Gila Monster Elementary over the past three years.

Table 9.2 Number of Students Exceeding the Standard - 3rd Grade				
Subject	Reading		Mathematics	
Year	# Exceeding	#Tested	# Exceeding	#Tested
2009	25	100	24	100
2010	24	105	23	105
2011	26	99	25	99
Total	75	304	72	304

The three-year average for percent of students exceeding the standard is:

$$\text{Percent Exceeding} = \frac{75 + 72 + 69}{304 + 304 + 304} = 23.6\%.$$

The one-year average for percent of students exceeding the standard is:

$$\text{Percent Exceeding} = \frac{25 + 25 + 24}{99 + 99 + 99} = 25.3\%.$$

The three-year z-score for third grade is:

$$z\text{-score} = \frac{.236 - .125}{.093} = 1.19.$$

The one-year z-score for third grade is:



$$z\text{-score} = \frac{.253 - .125}{.093} = 1.38.$$

Gila Monster Elementary serves grades K-6. The one- and three-year average z-scores for the entire school are:

Table 9.3 Average Z-scores		
Grade	One-year	Three-year
K-2	NA	NA
3	1.38	1.19
4	1.02	.86
5	.89	.72
6	.95	.80
Average	1.06	.89

The highest z-score for Gila Monster Elementary is 1.06 for the one-year average. This z-score is greater than 1.00, so Gila Monster Elementary would earn an excelling - if it has earned sufficient scale points.

Special Rules

The minimum group size for computing z-scores is 16. If a school has less than 16 students with usable test scores for either the one-year or the three-year calculation, then that z-score is not evaluated and the other is assigned. If a school has less than 16 students with usable test scores for both the one-year and the three-year calculations, the z-score is not evaluated at all for the school.

For high schools, students who take the math or reading test more than once during the fall or spring testing period within the one or three years used for the calculation have only their highest scores used in the calculation.



10. AZ LEARNS Achievement Profiles for Alternative Schools

Alternative schools are defined as schools that meet the Board-approved definition as schools whose sole and clearly-stated mission is to serve specific populations of at-risk students. Alternative school status is granted by application to the ADE. ARS §15-241 makes an allowance for a "parallel" evaluation method for alternative schools.

In 2011, there were 153 alternative schools in operation. The alternative schools list for 2011 can be found here: <http://www.azed.gov/research-evaluation/az-learns/>.

Definition of an Alternative School

The following is the definition of an alternative school as approved by the Board of Education in 2002.

1. A school operated by a school district must have adopted a mission statement that clearly identifies its purpose and intent to serve a specific student population (please see criterion three) that will benefit from an alternative school setting. A charter school must be expressly chartered to serve a specific student population that will benefit from an alternative school setting.
2. The educational program and related student services of the school must match the mission or charter of the school.
3. The school must intend to serve students exclusively in one or more of the following categories:
 - Students with behavioral issues (documented history of disruptive behavior)
 - Students identified as dropouts
 - Students in poor academic standing who are either severely behind on academic credits (more than one year) or have demonstrated a pattern of failing grades
 - Pregnant and/or parenting students
 - Adjudicated youth
4. Any school offering secondary instruction for academic credit used to fulfill Arizona State Board of Education graduation requirements (in part or in full) must offer a diploma of high school graduation.

Applying for Alternative School Status

To apply for alternative school status, an entity must submit a letter of application and supporting documentation to Achieve@azed.gov. The supporting documentation can include mission statements and any other information indicating that it is the school's sole mission to serve students listed in the definition above. The report card for a school applying for alternative status under AZ LEARNS must state in the "School Mission and Goals" section that it is an alternative school. Failure to specifically state this in the school report card will result in the application being denied.



If a school does not have current year AIMS data, alternative status will not be granted.

Schools already granted alternative status need not reapply. If granted, alternative status will apply until the school asks to have alternative status revoked or the school closes. Alternative status is not granted or applied retroactively. Applications that are submitted after the deadline will not be processed until the next accountability cycle.

As there is no LEA designation of alternative status, an LEA will not be designated as alternative. The designation only applies at the school level for individual schools.

General Process to Produce Achievement Profiles for Alternative Schools

The method for calculating an achievement profile for alternative schools is as follows:

1. AIMS scale score points are calculated using the status point calculation as for all other schools. Alternative schools do not receive points for improvement or MAP.
2. Points based on an alternative school's dropout rate are calculated as for all other schools.
3. Alternative schools will only receive profiles of performing and underperforming.
4. Schools serving both elementary and high school grades will receive a single profile.

Because of the uncertainty of measurement associated with small sample sizes and the high stakes of school profiles, schools initially deemed underperforming receive a "second look". Instead of determining baseline groups based on the mean percent of students passing AIMS, an alternate baseline group for these schools is determined based on the upper bound of a 95 percent confidence interval around the mean. If a school initially determined to be underperforming moves to a higher profile due to the second look, that school will receive a performing label.

Calculation of an Achievement Profile for an Alternative School

The method used to calculate scale points earned by alternative schools, regardless of the grades served, for these performance measures, are the same as the methods used for other schools.

- A school may receive up to six scale score points for each subject. Due to the small size of alternative schools, status points are calculated using a multi-year average of scores. Starting in the current year, scores from previous years are averaged until the total number of scores is 32. The status points are averaged across grades and then summed across subjects.
- A school may receive one point based on its dropout rate.
- The total points earned by a school are added up and compared to the school classification scale to determine a school's profile.



Classification Scale for Alternative Schools

The following classification scale is used for all alternative schools.

Table 10.1 Alternative School Classification Cut Points	
	Scale Points
Underperforming	< 6.0
Performing	6.0



11. AZ LEARNS Achievement Profiles for K-2 Schools

K-2 schools are schools that serve only Kindergarten through second grade. Since the AIMS is not administered at any of the grades served by these schools, the AZ LEARNS profiles for K-2 schools are based solely on the performance of the schools' second graders on the state's norm-referenced test.

Calculation of an Achievement Profile for a K-2 School

The method of calculating achievement profiles for these schools is straightforward:

1. The average normal curve equivalents (NCE) on the reading and math portions of the norm-referenced test are calculated for the most current year for a school's second graders.
2. The average normal curve equivalents for the school are added together, and
3. Compared to a scale to determine the school's profile.

Classification Scale for K-2 Schools

Table 11.1 provides the performance thresholds for K-2 schools.

Table 11.1 AZ LEARNS Scale for K-2 Schools	
Achievement Profile	Points
Underperforming	<70
Performing	70 to 96.9
Highly Performing	97 to 105.9
Excelling	106 or more



12. AZ LEARNS Achievement Profile Appeals Process

Procedure and Timeline

In accordance with ARS §15-241, school administrators are allowed the opportunity to appeal an achievement profile on behalf of the schools for which they are responsible.

Step 1: Data Correction. The first step in completing the AZ LEARNS appeals process required LEAs and schools to review their data in order to confirm its accuracy. Data correction took place from April 27, 2011 through August 24, 2011. It is important to note that LEAs were solely responsible for verifying information for their schools. If an LEA did not change the information for its schools through the correction process, the ADE assumed the schools on file and the data available were correct as listed.

Step 2: Substantive Appeal Submission. Administrators choosing to appeal an AZ LEARNS profile submitted appeals via the online appeals application during the specified appeals window. Substantive appeals were accepted from August 19, 2011 through August 24, 2011.

Schools were able to appeal AZ LEARNS profiles in two categories: data (statistical) and non-data (substantive) reasons - schools were not limited to one category and were able to appeal both if necessary. Statistical appeals are appeals of the accuracy of the data used in the calculation of the AZ LEARNS profile. Given the extensive time allowed to view and correct the data, it is expected that any errors should be corrected by the time preliminary profiles were released (August 19, 2011). Statistical appeals were not granted unless the underlying data was corrected. Substantive appeals are arguments by schools that circumstances outside of the school's control negatively impacted school performance.

Administrators that chose to appeal an AZ LEARNS profile must have clearly articulated the issues they believe merited an appeal. Administrators must have submitted evidence that the issues they believe merited an appeal directly resulted in a *significant* decrease in student academic achievement as demonstrated on the AIMS. Failure to provide this evidence resulted in the appeal not being granted. Evidence submitted after the appeals deadline was not considered.

NOTE: In order to protect student privacy and the integrity of the appeals process, schools were asked to refer to a specific student only by the student's SAIS ID number. The SAIS ID number was required so that ADE staff could verify the contentions in the appeal.

The ADE, if necessary, requested additional information/evidence from an LEA or school to assist in the appeals process. Only those requests for additional information that were provided during the specified appeals timeframe were included in the appeals process. Unsolicited additional information submitted after the appeals deadline was not accepted.



Step 3: Appeals Resolution. After all appeals were submitted and the appeals window closed, the ADE began to process the submitted appeals. Appeals were addressed categorically, not necessarily in the order they were received, so the fact that a school submitted its appeal during the first day of the appeals window did not mean it necessarily received a decision first during the resolution process.

Statistical appeals were resolved only through the recalculation of AZ LEARNS profiles by ADE staff using any corrected data submitted by schools. The purpose of a statistical appeal is principally to advise ADE staff that data was in error and has been corrected. Calculations submitted by schools via an appeal were not taken at face value nor used to alter a profile if the underlying data was not corrected.

Schools that were labeled underperforming for a third consecutive year were entitled to a site visit to determine if the profile was warranted. These site visits were important, as the third year underperforming profile merited an alternative designation of failing to meet the academic standards in accordance with statute. After the statistical review of appeals took place, schools that received an underperforming profile for the third consecutive time were scheduled to receive that visit. Teams from the Research and Evaluation and State Intervention sections of the ADE visited each of the third year underperforming schools to gather additional supporting data for the appeal as well as gather information related to the school's Arizona school improvement plan (ASIP) as required by statute. All information gathered from the site visits was taken to the substantive appeals committee for use in the third stage of the appeals process. Only third year underperforming schools received site visits as part of the appeals process.

Substantive appeals were resolved in a committee process. Committee members represented a diverse background of ADE staff and school administrators to ensure that appeals were considered from a multiple perspectives. Appeals were evaluated using an appeals rubric approved by the State Board of Education that evaluated the argument presented and whether or not the evidence provided to support the argument was compelling. The appeals rubric consists of a three-tiered system for appeal evaluation:

- 1) Initial review of the appeal to determine its merit.
- 2) Review of the evidence provided.
- 3) Committee recommendation.

Initial Review

The substantive appeals rubric provides for three categories that apply during the initial review. Each appeal was classified into the categories based on the information provided in the appeals.

1. ***Mitigating factors outside of the school's control.*** Appeals of this nature referenced when the school indicated significant issues that affected test scores outside of the school's control. If a school provided information detailing a



significant event that impacted test scores, which was clearly outside the school's control, the appeal was deemed as passing the initial review. Appeals involving the adverse affect of school or LEA policies; errors made by school or district personnel regarding test administration or data entry; or events whose impact could have been foreseen and mitigated by school or LEA action were not considered valid appeals.

2. **Implementation of the school improvement plan.** Appeals in this category discussed how the school was actively, consistently, and reliably implementing the school improvement plan; that the priorities of the solutions team had been addressed; the school improvement plan had been revised and updated to address assessed ongoing needs; and that professional development that supported the targeted goals had been planned and implemented. If a school provided information highlighting its school improvement plan, it may have accentuated the other two components on the rubric. However, per statute, a successful implementation of the school improvement plan alone cannot change the profile of a school. Additionally, only third-year underperforming schools may include the information about their ASIP in their appeal.

Review of Evidence

Once the appeals progressed through the first tier of the rubric, *initial review*, the evidence provided to support the appeal was evaluated. In this tier, three determinations were possible:

1. **Compelling evidence.** In this area, the school adequately provided information that led the committee to conclude that, had the circumstance been different, the achievement profile would have been different as well. If a school had a special circumstance that affected a certain grade and was able to demonstrate that the specific grade's test scores suffered, the school was deemed to have provided compelling evidence. Again, if a school provided compelling evidence highlighting their school improvement plan, it may have accentuated the other two components on the rubric (data calculations/mitigating factors). However, per statute, a successful implementation of the school improvement plan alone cannot change the profile of a school.
2. **Not compelling evidence.** Appeals were categorized in this area when the school was able to provide information that a significant issue *could* have impacted the school's performance but did not provide detailed, specific information as to specific outcomes that hindered the school's performance.
3. **Not applicable evidence.** If an appeal was submitted, made it through the initial review, and presented evidence that was not linked in any way to the performance of the school, the evidence was deemed not applicable. If the evidence did not directly support the claim made in the appeal, it was deemed not applicable.



Committee Recommendation

Once the appeal and evidence were reviewed, the committee arrived at a decision as to the outcome of the appeal. There were three possible outcomes:

1. ***Appeal granted and AZ LEARNS achievement profile changed.*** In these cases, the appeal successfully made it through the initial review and evidentiary stages. It was determined that the points needed to change the profile would have been earned by the school had the special circumstances/data discrepancy not occurred. Therefore, the profile for the school was changed.
2. ***Appeal granted and AZ LEARNS profile remains the same.*** In these cases, the appeal successfully made it through the initial review and evidentiary stages. However, it was determined that the criteria needed to change the profile were not earned by the school had the special circumstances/data discrepancy not occurred. For example, a school provided information and evidence that their ELL reclassification point was not accurately included in the calculations and the committee determined the school provided information to prove it earned the one point for ELL reclassification rate. However, the school needed 5 additional points to go from underperforming to performing. Therefore, the one point earned in the appeal was not enough to change the school's profile, so the profile remained the same.
3. ***Appeal denied.*** In these cases, the appeal did not successfully make it through the initial review and evidentiary stages. Therefore, the profile for the school remained the same.

Step 4: Notification of results sent to schools.

Once all appeals were resolved, notifications were sent to the entities that had filed appeals. The contact person of record for the entity received an email from Achieve when the appeal had been processed. Entities were notified no later than September 22, 2011 of the outcome of the appeals process. The final public release of the AZ LEARNS achievement profiles occurred on October 12, 2011. All appeals were final.

